

Please replace the Abstract with the following amended Abstract:

A magnetic field sensor for the measurement of at least one component of a magnetic field comprises a ferromagnetic core (4) that serves as a magnetic field concentrator, an excitation coil (3) and a read-out sensor (5). The read-out sensor (5) preferably comprises two sensors arranged in the vicinity of the outer edge of the ferromagnetic core (4) and measures the at least one component of the magnetic field. The ferromagnetic core (4) is ring-shaped or disc-shaped. On operation of the magnetic field sensor, a current is temporarily applied to the excitation coil (3) in order to bring the ferromagnetic core (4) into a state of predetermined magnetization in which the magnetization of the ferromagnetic core (4) produces no signal in the read-out sensor.